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new variety of *Aster laevis*, and one of *Arnica Parryi* from Colorado.—F. PETRAK (Bull. Soc. Bot. Genève II. 2:167-171. 1910) has published a new genus (*Wettsteinia*) of Compositae, based on *Carduus nidulans* Ruprecht.—E. P. PHILLIPS (Kew Bull. 286-290. 1910) has characterized a new genus (*Spatalopsis*) of the Proteaceae; the genus is a segregate from *Spatalla*, differing principally in having a regular calyx and conical stigma and, as present understood, contains 5 species, all of south African distribution.—L. QUEHL (Monats. für Kakteenkunde 20:139, 140. 1910) describes and illustrates a new species of *Mamillaria* (*M. Emskötteriana*) from Mexico.—J. F. ROCK (Bull. Torr. Bot. Club 37:297-304. 1910) has published 4 new species of flowering plants from Hawaii.—P. A. RYDBERG (*ibid.* 313-335, 443-471) in continuation of his "Studies on the Rocky Mountain flora" has described several new species of Compositae.—V. SCHIFFNER (Oesterr. Bot. Zeitschr. 60:169-173. 1910) presents a consideration of the genus *Chiloscyphus*, segregating therefrom a group of species for which he proposes the new generic name *Heteroscyphus*.—R. SCHLECHTER (Rep. Nov. Sp. 8:453-458. 1910) has published several new species of Orchidaceae, of which 7 are from Central and South America.—J. K. SMALL (Torreya 10:186-188. 1910) describes a new genus (*Carteria*) of the Orchidaceae; the plant is a native on the Everglade Keys, Florida, and is also said to occur in the Bahamas.—D. R. SUMSTINE (Mycologia 2:125-154. 1910) under the title "The North American Mucorales I" gives a synoptical treatment of the group with keys to the genera and species.—F. THEISSEN (Broteria Ser. Bot. 9:5-44. 1910) under the title "Perisporiales Riograndenses" gives an annotated list of the Perisporiaceae of southern Brazil, including several species new to science; the list is supplemented by a catalogue of the host plants.—C. TORREND (*ibid.* 45-53) presents the results of studies on the Myxomycetes of Portugal and proposes a new genus (*Helolachnum*) of the Discomycetes.—P. WILSON (Bull. Torr. Bot. Club 37:437, 438. 1910) has described a new species of *Ravenia* and one of *Spathelia* from eastern Cuba.—F. A. WOLF (Mycologia 2:241, 242. pl. 32. 1910) has published a new species of *Macrophoma*; the fungus is parasitic on leaves of the American mistletoe (*Phoradendron flavescens*), and up to the present time has been found only in Texas.—H. WOLFF (Rep. Nov. Sp. 8:414, 415. 1910) has published two new species of *Eryngium*, namely *E. Ekmanii* from Argentina and *E. Harmsianum* from California.—Several authors (Kew Bull. 192-197. 1910) have described new species of flowering plants, including a new *Tabebuia* (*T. stenocalyx*) from Trinidad and a *Catopsis* (*C. penduliflora*) from Peru.—J. M. GREENMAN.

**Russian grain rusts.**—During a number of years JACZEWSKI has made a study of the grain rusts in Russia, the results of which have been published in a Russian monograph. Believing that local observations in different regions may serve to elucidate some phases in the life history of the rusts, the author has made those results of his studies which might be of general interest avail-

able to a wider group of readers by publishing an abridged account in German.<sup>8</sup> While the paper contains little that is essentially new, it gives an excellent account of the biology of the collective species *Puccinia graminis* as observed by the author in Russia. The account is valuable for comparison with similar observations made in other regions, for it is possible that the ecological and biological routine of development of the grain rusts is not the same in all regions. An illustration of this possibility is found in the present paper in reference to the different sources of infection of new grain in spring in Russia and in the United States.

JACZEWSKI attributes the primary infection of wheat in spring entirely to aecidiospores from barberry. In the plains of the middle west, where barberry bushes are rare or do not occur at all over rust areas, both BOLLEY and CARLETON have found that the fungus is carried through the winter by means of surviving uredospores. In Russia JACZEWSKI finds that none of the uredospores survive through the winter, either on the straw or on living plants; nor does the mycelium of the fall survive on seedling wheat, for when infected seedlings are covered with glass cases they remain free from rust the following summer. These experiments, as well as some similar ones with older rhizomes of wheat and orchard grass, the author regards as disproving the validity of ERIKSSON's mycoplasma theory.

As to the spermatia, the author differs from the usual cytological interpretation of considering them as male cells, and considers them to be of the nature of conidia. It must be admitted that there is as much evidence for one view as for the other. Their persistency and universal occurrence he thinks is an objection to regarding them as functionless organs.

Of particular interest is the long series of cultures of uredospores on different grasses. The results are tabulated in a manner easily comprehended. A comparison of his own results with those of others suggests the possibility that the degree of specialization of form-species of rusts to certain hosts may not be the same for all regions, but may depend upon local conditions.—H. HASSELBRING.

**Lipoids and respiration.**—By extracting wheat germs with various solvents of lipoids, and then determining the carbon dioxid evolved from the germs during a given period of time, PALLADIN and STANEWITSCH<sup>9</sup> seek to establish a relation between respiratory activity and the lipoid content of plants. The germs were extracted with a given solvent until nothing was removed by new quantities of the solvent. The solvent was then removed and the germs were placed on filter paper and soaked in water for 30 minutes, after which they

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<sup>8</sup> JACZEWSKI, A. VON, Studien über das Verhalten des Schwarzrostes des Getreides in Russland. Zeitschr. Pflanzenkrankh. 20:321-359. figs. 8. 1910.

<sup>9</sup> PALLADIN, W., and STANEWITSCH, E., Die Abhängigkeit der Pflanzenatmung von den Lipoiden. Biochem. Zeitschr. 26:351-369. 1910.